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| 09/938,394      | 08/23/2001  | Duane Fasen          | 10004405-1          | 2455             |

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| EXAMINER |
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MANDALA, VICTOR A

|          |              |
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| ART UNIT | PAPER NUMBER |
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2826

DATE MAILED: 12/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

### Application No.

09/938,394

### Applicant(s)

FASEN ET AL.

### Examiner

Victor A Mandala Jr.

### Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 22-24 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-20 and 23 is/are rejected.
- 7) ☒ Claim(s) 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Applicant Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### **Response to Amendment**

1. The Applicant has amended the claims in the response filed on 9/22/03. The examiner has considered the amendment and finds the newly amended claims to read around the previous rejections in the Office Action filed on 6/19/03. Claims 13-24 will be further examined. Claim 22 has been amended to depend upon withdrawn claim 1, which the examiner will assume the Applicant is aware that claim 22 will be withdrawn also.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-20 & 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0135825 Lee et al. in view of U.S. Patent No. 6,479,879 Pike et al.

2. Referring to claim 13, an image sensor system comprising: an active image sensing device structure comprising an array of light sensing elements, (Lee et al. Figure 2 #210); a color filter array comprising an array of color filters, (Lee et al. Figure 2 #230), each disposed over a respective light sensing element, (Lee et al. Figure 2 #210), through a respective light transmission path substantially transmissive to radiation in a visible wavelength range; and a bottom antireflection coating, (Lee et al. Figure 2 #220), disposed in each light transmission path between the color filter array, (Lee et al. Figure 2 #230), and the active image sensing device

Art Unit: 2826

structure, (Lee et al. Figure 2 #210), wherein the bottom antireflection coating, (Lee et al. Figure 2 #220), has a thickness less than approximately 200 nm, (Pike et al. Figure 7 #42 Col. 3 Lines 10-12 & see \*\* below).

\*\* Lee et al. teaches all of the claimed matter in claim 1 except for the bottom antireflection coating having a thickness less than approximately 200 nm, but Pike et al. does in Col. 3 Lines 10-12. It would have been obvious to one having skill in the art at the time the invention was made to make the bottom antireflection coating have a thickness less than approximately 200 nm because it is well known and common measurement used in BARC semiconductor devices. Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

3. Referring to claim 14, wherein the bottom antireflection, (Lee et al. Figure 2 #220), coating comprises a dyed organic film-forming material, (Pike et al. Col. 3 Lines 2-3 & see \*\*\* below).

\*\*\* Lee et al. discloses the claimed invention except for the bottom antireflection coating being made out of organic material, but Pike et al. does. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the bottom antireflection coating out of organic material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

4. Referring to claim 15, wherein the bottom antireflection coating, (Lee et al. Figure 2 #220), comprises a light absorbing polymeric film forming material, (Pike et al. Col. 3 Lines 2-3 & see \*/\* below).

\*/\* Lee et al. discloses the claimed invention except for the bottom antireflection coating being made out of a polymeric material, but Pike et al. does. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the bottom antireflection coating out of a polymeric material since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Art Unit: 2826

5. Referring to claim 16, wherein the bottom antireflection coating, (Lee et al. Figure 2 #220), has a thickness selected to improve an optical transmission characteristic of one or more colors of the color filter array, (Lee et al. Figure 2 #230 & see \*/\* below).

\*/\* In reference to the claim language referring to a thickness selected to improve an optical transmission characteristic, intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963). It would be obvious to one skilled in the art to combine the teachings of Lee et al. and combine them with the teachings of Pike et al. because adjusting the thickness of an antireflective film would allow adjustment to the focal point and to the refractory angle, thus allowing the sensor to be adjusted to properly sense. These teachings are well known in the art and are evident by people who wear glasses.

6. Referring to claim 17, wherein the bottom antireflection coating, (Lee et al. Figure 2 #220), is substantially transmissive to radiation in a wavelength range of about 400nm to about 700nm, (Lee et al. Paragraph 0008).

7. Referring to claim 18, wherein the color filter array comprises a plurality of colored photoresist structures, (Lee et al. Figure 3 #210).

8. Referring to claim 19, wherein the bottom antireflection coating, (Lee et al. Figure 2 #220), has a substantially higher plasma etch rate than the color filter array, (Lee et al. Figure 2 #230 & see \*/\*).

\*/\* It is apparent in Lee et al.'s in view of Pike et al.'s design that the same material for the antireflection coating is used in the applicants' design, thus the material would have the same physical properties resulting in the same output as claimed in claim 19.

Art Unit: 2826

9. Referring to claim 20, wherein the active image sensor device structure comprises a complementary metal-oxide-semiconductor (CMOS) image sensor, (Lee et al. Paragraph 0025).

10. Referring to claim 23, wherein the bottom antireflection coating, (Lee et al. Figure 2 #220), is present only in regions directly under color filter array material, (Lee et al. Figure 2 #230 and Figure 3 #231).

***Allowable Subject Matter***

11. Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Application/Control Number: 09/938,394  
Art Unit: 2826

Page 6

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor A Mandala Jr. whose telephone number is (703) 308-6560. The examiner can normally be reached on Monday through Thursday from 8am till 6pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

VAMJ  
12/08/03

A handwritten signature in black ink, appearing to be 'VAMJ', with a stylized, cursive-like flourish extending from the end.